



## INDUSTRIAL AND COMMERCIAL FLAME DETECTORS

### PRODUCT DESCRIPTION

The Detectors Incorporated Single Infra-Red (IR) Spark Detector responds to low frequency (1 to 15 Hz.) flickering IR radiation emitted from sparks and other hot objects during combustion. IR flame flicker techniques enable the sensor to operate through layers of oil, dust, water vapor, or ice. Most IR spark sensors respond to 4.3 $\mu$ m light, emitted by hydrocarbons. By responding to 1.0 to 3.0 $\mu$ m light emitted by sparks, early stage fire can be rapidly detected. The single IR photoelectric detector responds to IR wavelengths, emitted from glowing embers and sparks and is ideal for these applications. The combination of filters and signal processing allows the sensor to be used without risk of false alarms on dark machinery and ductwork.

Fires that start in production machinery can quickly spread to other locations in the facility. If these production systems are damaged by fire the facility cannot continue to operate.



### APPLICATIONS

- ❖ Agriculture
- ❖ Furniture Fiber Filling
- ❖ Tissue
- ❖ Hygiene Product Manufacturing
- ❖ Dryers
- ❖ Dust Collection/Filters
- ❖ Textiles
- ❖ Pulp/Paper Production
- ❖ Woodworking
- ❖ Bioenergy
- ❖ Food processing
- ❖ Pre-Separators
- ❖ Rotary Filters
- ❖ Vacuum Waste Systems
- ❖ Balers
- ❖ Cotton Gins

### FEATURES AND BENEFITS

- ❖ Fast Response time for enclosed and dark areas
- ❖ High Sensitivity to Embers
- ❖ Selectable Output Options; Conventional 2 wire, 4-20mA, Relay Contacts (Fire/Fault, Pre-alarm - Latching or Non-latching)
- ❖ Remote Control Self-Test
- ❖ Low Power Consumption
- ❖ 3-year warranty.
- ❖ RFI & EMC compliant



# MODEL D161 SPARK DETECTOR TECHNICAL DATA

## GENERAL

Field-of-View: 90° Horizontal and Vertical

Detection Range: 2" Dia. n-Heptane fire, distance 4.5 ft.  
12 x 12" IPA fire, distance 30 ft.

Std Response time Alarm 1 Second

Operating Frequency: 1.0 to 3.0µm

## ELECTRICAL

Power Consumption: Standby: 8 mA @ 24 VDC  
Alarm: 28 mA @ 24 VDC

Output Relays: Alarm /Fault  
SPDT—contacts rated 2A @ 24VDC.  
Alarm relay: De-Energized  
Fault relay: Energized.

Power Up Time 2 Seconds Max

Analog Output: 0-20 mA Stepped – Source.

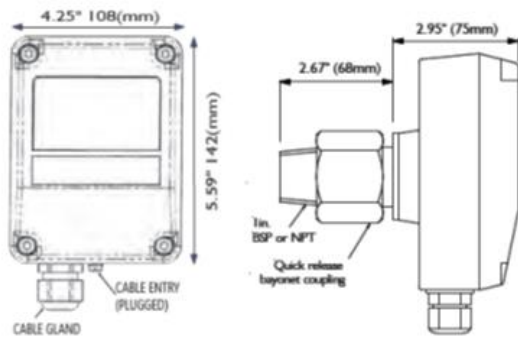
Visual Indications: Green LED - Normal  
Red LED - Alarm  
Amber LED - Fault

Wiring: 12 AWG (3.3mm<sup>2</sup>) – 22 AWG (.33mm<sup>2</sup>)

## MECHANICAL

Enclosure Material: Die Cast Zinc Alloy (ZA12)

Weight: 5.29 lbs. (2.4 kg)



## ENVIRONMENTAL

Humidity Range: 5 to 95% Relative humidity, Non-Cond.

Operating Temperature: +14° to +131° F (-10° to +55°C)

Storage Temperature: -4° to +131° F (-20°C to +65°C)

Vibration: In compliance with FM 3260-2003,  
Meets or Exceeds MIL-STD 810C

Enclosure Type: IP66

## ORDERING INFORMATION

- D161 (16580) The Single IR Rear Viewing Spark Detector is designed for machine applications to protect enclosed, dark areas where visible light is not present. The detector has one infra-red (IR) sensor, which is selective to low frequency modulated infra-red (IR) radiation such as that emitted from flames and sparks.
- 12561 4 Hole Mounting Flange Kit with 1" BSP/NPT for mounting on ducts. No Window.
- 12564 2 Hole Mounting Flange Kit with 1" BSP/NPT for mounting on ducts. No Window.
- 12543 2 Hole Mounting Flange Kit with 1" BSP/NPT for mounting on ducts with ¼" Air Purge Inlet Hole.
- 12554 4 Hole Mounting Flange Kit with 1" BSP/NPT for mounting on ducts with ¼" Air Purge Inlet Hole.
- 12290 Bayonet Mount with Male 1" BSP

Installation Recommendations: Please refer to our User Manual for mounting and wiring instructions.

The installation of Detectors Incorporated® flame detectors should be executed in accordance with the recognized national or international standards and codes of practice.

Specifications and wiring information are provided for information only and are believed to be accurate. Detectors Incorporated assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions are shipped with the products and should always be used for actual installation. For more information, contact your Sales Representative.

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